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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/687,335	10/13/2000	John T. Flynn JR.	SJ09-2000-0174USI	9824
7590 02/04/2004			EXAMINER	
DAVID W. LYNCH CRAWFORD MAUNU PLLC 1270 NORTHLAND DRIVE SUITE 390 MENDOTA HEIGHTS, MN 55120			BONURA, TIMOTHY M	
			ART UNIT	PAPER NUMBER
			2114	8
DATE MAILED: 02/04/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/687,335

Applicant(s)

FLYNN ET AL.

Examiner

Tim Bonura

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 23, 24, 26, 27, 29, 31, 32, 34, 35 and 37 is/are rejected.
- 7) ☒ Claim(s) 5, 7-22, 25, 28, 30, 33, 36 and 38 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Statement (PTO-912) Paper No(s) _____
- 5) ☐ Notice of Informal Examination (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Marks, et al, U.S. Patent Number 5,790,775. Regarding claim 1:

a. Regarding the limitation of mapping open options of the operating system to SCSI persistent reserve commands to allow all of the multiple paths to register with the logical unit number of the shared storage system: Marks discloses a system with a shared storage system controlled by a SCSI controller over a SCSI bus (Lines 6-8 of Column 5).

b. Regarding the limitation of allowing the second of the multiple paths to access the logical unit number of the shared storage system after obtaining a persistent reservation with the shared storage system, Marks discloses a system wherein one of the SCSI controllers, in the event of a failure by another SCSI controller, will assume control of the SCSI ID of the failed controller. (Lines 20-25 of Column 3).

3. Regarding claim 2, regarding the limitation of mapping open options, Marks discloses that the fault tolerant system is an “open system”. (Lines 1-3 of Column 3). Regarding the limitation of registering all paths from a first host with the LUN of the storage system, Marks

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also discloses that the each controller is configured to service zero or more SCSI Ids, wherein a controller to access one of the associated units uses the ID. (Lines 12-19 of Column 3).

4. Claims 23, 24, 26-27, 29, 31, 32, 34-35, and 37 are rejected under 35 U.S.C. 102(a) as being anticipated by IBM's SCSI Command Reference manual (hereby referred to as ISCRM).

5. Regarding claim 23, the ISCRM discloses a system with reservation keys to identify registered host (Lines 1-4 of Page 22), and processing persistent reservation commands to control access by a host. (Lines 1-6 of Page 23).

6. Regarding claim 24, ISCRM disclose that persistent reserve out and in commands provide the basic mechanism for dynamic contention resolution in multiple initiator systems using multiple port targets. (3rd-6th Lines of 2nd Paragraph on Page 23).

7. Regarding claim 26, the ISCRM (provided in the applicant's IDS) contains a list of features that are built into SCSI devices. ISCRM discloses a system with means of gathering information about a persistent reservation and reservation keys for a LUN (Bottom half of page 23).

8. Regarding claim 27, the ISCRM discloses a system wherein a reservation in command is used to reserve a LUN. (Page 23, Middle of page, Paragraph starting with "To reserve a LUN...").

9. Regarding claim 29, ISCRM discloses a system with a persistent reserve out command for LUN on a shared storage system. (Middle of page 23, Paragraph starting with "Since persistent reservation...").

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10. Regarding claim 31, the ISCRM discloses a system with reservation keys to identify registered host (Lines 1-4 of Page 22), and processing persistent reservation commands to control access by a host. (Lines 1-6 of Page 23).
11. Regarding claim 32, ISCRM disclose that persistent reserve out and in commands provide the basic mechanism for dynamic contention resolution in multiple initiator systems using multiple port targets. (3rd-6th Lines of 2nd Paragraph on Page 23).
12. Regarding claim 34, the ISCRM (provided in the applicant's IDS) contains a list of features that are built into SCSI devices. ISCRM discloses a system with means of gathering information about a persistent reservation and reservation keys for a LUN (Bottom half of page 23).
13. Regarding claim 35, the ISCRM discloses a system wherein a reservation in command is used to reserve a LUN. (Page 23, Middle of page, Paragraph starting with "To reserve a LUN...").
14. Regarding claim 37, ISCRM discloses a system with a persistent reserve out command for LUN on a shared storage system. (Middle of page 23, Paragraph starting with "Since persistent reservation...").

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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16. Claim 3, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marks as applied to claim 1 above, and further in view of IBM's SCSI Command Reference manual (hereby referred to as ISCRM).

17. Regarding claim 3, Marks discloses a system with multiple SCSI controllers and a method for backing up one of the SCSI controllers with the other controller. Marks does not obtain information about persistent reservations and reservation keys. The ISCRM (provided in the applicant's IDS) contains a list of features that are built into SCSI devices. ISCRM discloses a system with means of gathering information about a persistent reservation and reservation keys for a LUN (Bottom half of page 23). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the information gathering of the ISCRM with the SCSI fail over of Marks. The ISCRM contains information that is standard in SCSI systems; thereby it would have been included within the SCSI system of Marks.

18. Regarding claim 4, the ISCRM discloses a system wherein a reservation in command is used to reserve a LUN. (Page 23, Middle of page, Paragraph starting with "To reserve a LUN...").

19. Regarding claim 6, Marks discloses a system with multiple SCSI controllers and a method for backing up one of the SCSI controllers with the other controller. Marks does not obtain information about persistent reservations and reservation keys. ISCRM discloses a system with a persistent reserve out command for LUN on a shared storage system. (Middle of page 23, Paragraph starting with "Since persistent reservation..."). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the information gathering of the ISCRM with the SCSI fail over of Marks. The ISCRM contains information that is

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standard in SCSI systems; thereby it would have been included within the SCSI system of Marks.

Allowable Subject Matter

20. Claims 5, 7-22, 25, 28, 30, 33, 36 and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

21. Applicant's arguments filed 10/21/2003 have been fully considered but they are not persuasive.

22. Regarding claims 1:

c. Regarding the argument of "Marks does not disclose, teach or suggest at least 'mapping open options of the operation system to SCSI persistent reserve commands'" (7th paragraph of 1st page of paper number 7). The examiner believes that Marks does teach the limitation of "mapping open options of the operation system to the SCSI persistent reserve commands." (See rejection above for claim 1). The examiner contends that the failover steps (Lines 7-22 of Column 10 also shown in Figure 6, 7A, and 7B steps 102-130) of Marks constitute the mapping, as disclosed in the amended claims of the applicant. The applicant state "[the mapping] enables use of the shared storage system via an alternate input/output path upon a hardware failure of a first of multiple input/output paths". The examiner contends that Marks controller failure failover clearly

teaches this argument; “any device and/or cache currently attached to the failed controller will automatically become available and accessible through the operating or surviving controller when the failover operation is thus triggered.” (Lines 30-35 of Column 9). In other words, Marks’ failover takes a failed SCSI communications path and redirects it through a redundant SCSI communications path. (Lines 30-35 of Column 9).

23. Regarding claims 23 and 31:

d. Regarding the argument of that “The ISCRM does not teach processing reservation keys,” and “ISCRM does not suggest what operations concerning reservation keys are performed. Thus, ISCRM, fail to disclose, teach or suggest at least ‘processing reservation keys to identify registered hosts.’” (3rd paragraph, Page 13 of paper number 7). The examiner contends that the ISCRM teaches of persistent reserve keys. (See rejection of claims 23 and 31 above). The examiner also contends that the ISCRM clearly shows that reservation keys identify hosts that hold conflicts thereby the ISCRM teaches of reservation keys identifying registered hosts; “identification of persistent reservations using the reservation key makes it possible to determine which ports hold conflicting persistent reservations and to take over persistent reservations from failing or uncooperative initiators.” (2nd paragraph, lines 6-9 of page 23). Using of reservation keys shows that the ISCRM teaches of processing of reservation keys.

e. Regarding the argument of that “ISCRM does not disclose, teach or suggest the more detailed aspect of persistent reserve commands being used to control access by a host. Thus, ISCRM, fail to disclose, teach or suggest at least processing reservation commands to control access by a hosts.” (4th paragraph, Page 13 of paper number 7).

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The examiner contends that the ISCRM teaches of persistent reserve keys. (Line 1-4 of page 22). The ISCRM also teaching persistent reserve commands when it states that a “reservation key is set by an initiator with a Persistent Reserve Out command with a service action of Register. An eight byte reservation key is transmitted in the data of that command.” (2nd paragraph, last 3 lines of page 23). Finally the ISCRM shows processing of keys, “to reserve a LUN using a persistent reserve the initiation must first register with the LUN, then issue a persistent reserve out command with a service action of reserve.” (3rd paragraph, all lines of page 23). The transmitting, using, and responding to the persistent reserve commands clearly shows processing of the keys.

Conclusion

24. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

25. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tim Bonura**.

- The examiner can normally be reached on **Mon-Fri: 7:30-5:00, every other Friday off**. The examiner can be reached at: **703-305-7762**.

27. If attempts to reach the examiner by telephone are unsuccessful, please contact the examiner's supervisor, **Rob Beausoliel**.

- The supervisor can be reached on **703-305-9713**.

28. The fax phone numbers for the organization where this application or proceeding is assigned are:

- **703-872-9306 for all patent related correspondence by FAX.**

29. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **receptionist** whose telephone number is: **703-305-3900**.

30. Responses should be mailed to:

- **Commissioner of Patents and Trademarks**

P.O. Box 1450

Alexandria, VA 22313-1450



NADEEM IQBAL
PRIMARY EXAMINER

tmb

January 10, 2004

Tim Bonura
Examiner
Art Unit 2114